Basically there is option as with the previous options adds no value whatsoever to the end user to the customer, it does add complexity both physically because you have multiple connections and even though technicians are highly trained and quality individuals, they sometimes make mistakes so you're adding multiple areas where you could have problems. You're adding complexity to the provisioning of that service; you're adding complexity to the databases that track that service both on the ILEC and the CLEC side.

In addition, the last option adds a security issue which Bell Atlantic is very adamant about not allowing others into their space and I'm sure that most CLECs are not interested in having unknown individuals into their equipment, so it's the same--all the same issues we had with the previous options and this one has an additional issue which is security. Thank you.

JUDGE STEIN: Are there other comments. Ms. Jones?

MR. JONES: Rochelle Jones, Time-Warner.

Q Is it fair to say in those instances you and the other collocaters are jointly providing service to a customer?

A (Davis) To the same extent that we jointly provide service to Bell Atlantic, yes. We are utilizing Bell Atlantic UNEs or Bell Atlantic tariffed facilities.

Q Your central offices, are they manned?

A (Davis) Yes, they are typically.

MR. MILCH: That's all I have, Your Honor.

JUDGE STEIN: Thank you.

MR. HADDAD: I just have a few questions for Mr. Fogarty.

Q Frequently, Mr. Fogarty, what is your experience with Bell Atlantic New York central offices?

A (Forgarty) I am an equipment engineer for about 20--I was equipment engineer for about 15 years and I went to standards and collocation practices, implementation for the last, I guess, eight to ten years, nine years.

Q In your experience how many two-person crews can work on a single MDF during one shift?

A (Forgarty) Two people run--two-team runs in

cross-connections if that's the question you're asking without getting in each other's. After that, the release of wire starts to get tangled. You've got people answering calls to utilize the frames for other reasons, so usually two, two-man teams per frame is about the best you're going to get.

MR. MILCH: Your Honor, I would like to object to the friendly cross.

MR. HADDAD: Your Honor had said this an informal proceeding. I think this is an effective way of getting information out on the record that is very directly relevant, as I think you'll see from the additional questions that I have, which are just three or four in number of Mr. Fogarty.

JUDGE STEIN: Well, I'm a little concerned if the purpose of this phase of this inquiry is to allow you to explore the option offered by Bell Atlantic, in this case with Intermedia, that's the focus. If you want to essentially cross-examine Bell Atlantic's witnesses by cross examining COVAD witness on Bell Atlantic practices, I'm not interested in that. I'd rather have you cross-examine them on Bell

ATTACHMENT 23

BEFORE THE
NEW YORK PUBLIC SERVICE COMMISSION

Petition of New York Telephone Company for Approval of its Statement of Generally Available Terms and Conditions Pursuant to Section 252 of the Telecommunications Act of 1996 and Draft Filing of Petition for InterLATA Entry Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in the State of New York	:	Case 97-C-0271

AFFIDAVIT OF GERARD J. MULCAHY

ON BEHALF OF BELL ATLANTIC - NEW YORK

STATE OF NEW YORK }
} ss:
COUNTY OF NEW YORK }

Gerard J. Mulcahy, being duly sworn upon oath, deposes and states as follows:

1. My name is Gerard Mulcahy and I am a Principal in Coopers & Lybrand L.L.P.'s ("C&L") Telecommunications & Media Consulting Practice. My business address is 1301 Avenue of the Americas, New York, NY 10019.

2. The purpose of my affidavit is to present the results of our review of BA-NY's delivery of Operations Support Systems ("OSS") used to provide wholesale services to CLECs.

A. PROFESSIONAL EXPERIENCE

3. I have worked in the telecommunications industry for the past 26 years. For the last 13 years I have worked as a consultant with C&L participating in a wide spectrum of telecommunications engagements. My experience with C&L includes customer satisfaction and loyalty research, process design and re-engineering, regulatory strategic planning and financial analysis, product costing and pricing, operations analysis and productivity improvement. I have also led large process re-engineering efforts for major telecommunications industry players aimed at improving operations, increasing loyalty through improved customer satisfaction and improving revenue retention and growth. As a part of C&L, I have consulted to most major telecommunications companies within the United States and a number of large companies in other regions of the world.

4. Prior to joining C&L, I was a manager with AT&T Communications for two years. I also have more than twelve years of experience on the staff of the New York State Department of Public Service culminating in the position of supervising staff engineer in the Commission's Communications Division New York Field Office.

5. I have a Bachelor of Science degree in Engineering Science from Richmond College of the City University of New York and have completed graduate courses in Financial Management at Pace University.

B. SUMMARY OF AFFIDAVIT

6. I led the multi-disciplinary C&L team which reviewed Bell Atlantic-New York's ("BA-NY"), formerly New York Telephone, OSS with respect to its ability to provide services to Competitive Local Exchange Carriers ("CLECs"). Our review focused on the OSS support made available by BA-NY to CLECs. The C&L team was comprised of consultants with experience and relevant backgrounds in telecommunications, systems consulting, process engineering, simulation modeling, and telecommunications regulation.

7. Our review was conducted over a period of approximately 70 days, and among other things, tested the ability of the current OSS's to actually process projected 1998 activity volumes within the performance standards specified by the company. Specifically, we reviewed a test in which BA-NY processed over 15,000 orders in three days and compared the test results to the company's performance targets. Additionally, our review included analysis of BA-NY's current OSS functionality, capacity, and performance to assess comparability to retail operations.

8. Overall, our analysis demonstrated that the company can successfully process expected total 1998 order volumes. Furthermore, the test results showed that the company can process these volumes at performance levels consistent with either company standards or retail operations. I have provided below a summary of our key findings for each of the five process areas covered in the review. Detailed descriptions of our analyses, with supporting exhibits, for pre-order, order,

provisioning, billing, and maintenance and repair are attached to my affidavit as Attachment 1.

Pre-ordering

9. The volume testing of the pre-order system showed that the company has the capacity to perform over 46,000 pre-order transactions per day with at least 200 simultaneous users (the maximum number of simultaneous users our test would allow). This is three (3) times above the company's forecast of 1998 volumes.

Ordering

10. The three day test demonstrated that the company can process at least 7,400 orders in one day – over five (5) times the company's forecast for 1998. This was accomplished at performance levels that met or exceeded the company's performance targets, with the exception of certain UNE loop confirmation notices. The results of the test also showed that the company could provide significant levels of electronic flow-through of orders, with 87% of resale orders flowing through, and 72% of all resale and UNE orders combined flowing through. Finally, the results of our analysis showed that the company also had additional manual and electronic processing capacity beyond that required during the three day test.

Provisioning

11. Our analysis confirmed that BA-NY uses the same processes for provisioning wholesale and retail orders, except for UNE-loop conversion orders, which do not have a retail analog. The results of the end-to-end test and our review of historic

data also showed comparable performance for wholesale and retail provisioning operations in terms of meeting performance targets. In addition, we performed a time and activity study which concluded that BA-NY can currently complete UNE-loop conversions for at least 285 lines per day per central office. Although regionwide capacity is now limited to 300 lines per day because of current staffing levels for centralized functions, this constraint can easily be relieved with the redeployment of existing personnel.

Billing

12. Our test showed that BA-NY accurately accounts for usage associated with wholesale customer calls. In addition, we found that BA-NY consistently delivers the usage data to CLECs within defined performance parameters.

Maintenance and Repair

13. The results of time and activity studies of the trouble reporting component of the M&R process shows comparable retail and wholesale performance levels. In addition, our analysis confirmed that the trouble resolution system is the same for wholesale and retail operations.

14. Over the course of the design and implementation of the tests, BA-NY was able to use pre-testing trials to identify problems in its systems and to institute corrective action that significantly improved throughput and processing performance. During this time, the company also continued to extend and enhance its operational support systems in order to serve CLECs.

C. SCOPE AND APPROACH OF REVIEW

Introduction

15. The wholesale delivery processes covered in our review include pre-ordering, ordering, provisioning, billing and maintenance & repair. The functionality of these processes are covered by a number of company witnesses in this and earlier proceedings. In general, our review reflects the status of BA-NY's systems and plans as of the end of September, 1997. Our review included the processing of platforms orders. I have been informed by the Company that as a result of recent court actions, UNE-platform orders will soon no longer be offered. Our review was completed before this changed was determined. One of the purposes of our review was to confirm how the processes work. At a summary level, the functionality for each process is defined as follows:

Pre-ordering: The processes by which a CLEC gains access to BA-NY's customer records and other databases to: (1) identify the services currently provided to the customer; (2) assess the availability of other products and services; (3) obtain service due date information; (4) reserve and select telephone numbers; and (5) validate address and other relevant information prior to placing an order.

Ordering: The processes by which a CLEC local service request is received by the company, translated into an internally recognized service order, and entered into BA-NY's legacy (i.e., existing) service provisioning systems.

Provisioning: The processes by which BA-NY establishes, deploys, or modifies a

customer's services as requested by a CLEC.

Billing: The processes by which BA-NY collects and reports customer usage data, distributes the data to the appropriate CLECs, facilitates adjustment and claim processing, and bills CLECs for wholesale services.

Maintenance & Repair (M&R): The processes by which BA-NY assists a CLEC in identifying, analyzing, and resolving problems (i.e., "troubles") reported on resold or Unbundled Network Element ("UNE") services furnished to a CLEC customer.

16. We reviewed the operational support systems for the stated wholesale delivery processes in light of the following criteria:

REVIEW CRITERIA

Functionality: Do the operational support systems deliver the process functions which BA-NY has indicated are required to support CLEC market entry?

Capacity: Is BA-N capable of receiving and processing the volumes that are expected from current and 1998 anticipated CLEC operations?

Parity/Performance: Can BA-NY process current and anticipated volumes at performance levels similar to BA-NY's retail operations, or at the performance levels specified by company targets?

REVIEW APPROACH BY PROCESS

17. We designed our approach to ensure that we addressed all five processes against each of the review criteria. An integral part of the approach was the design of an end-to-end test that simulated actual CLEC orders going through BA-NY's wholesale ordering, provisioning and billing processes. The volumes used in the

test were developed by the company. These volumes were designed to test whether the company could handle substantially more orders than it anticipates receiving in 1998. Pre-ordering and M&R were analyzed separately from the end-to-end test, although pre-ordering capacity testing was also conducted during the three days of end-to-end test. Where available we also reviewed internal test results, test error logs, staffing plans, methods & procedures, and historical performance data.

Pre-Ordering

18. To test the pre-ordering process, BA-NY conducted a high volume electronic emulation "stress test" from outside the company's firewall to simulate real pre-order transaction processing. This "stress test" was used to confirm system functionality, measure performance, including response times, and evaluate operating capacity. Testing was performed concurrently with the end-to-end volume test. The results of the electronic "stress test" in combination with historic performance data were also used to evaluate wholesale performance relative to retail operations.

Ordering

19. We used three separate approaches to evaluate the wholesale order process. First, we reviewed historic data to evaluate system performance and capacity as well as overall process performance relative to company standards. Second, we performed time and activity studies for live production orders at each of the company's order centers to determine current overall manual processing capacity.

Third, we evaluated the results of the end-to-end test to measure the company's ability to process expected 1998 volumes.

Provisioning

20. To evaluate the functionality, capacity and performance of the wholesale provisioning process, we employed three separate analyses. First, we used a sample of comparable retail and wholesale service orders to evaluate systems and databases for commonality of process. Second, we used historic performance data and the results of the end-to-end test to measure performance for wholesale and retail operations as well as the company's ability to process the level and type of orders included in the 1998 test volumes. Third, because of their special provisioning requirements, we conducted time and activity studies of live production orders to determine the company's capacity to provision UNE-loop conversion orders.

Billing

21. Our analysis of the billing process focused on measuring the timeliness of the production and distribution of the customer daily telephone usage data files to CLECs, and assessing the commonality of the process for capturing usage data across wholesale and retail operations. We also tested the accuracy of the company's processes for recording usage data through an analysis of test calls.

Maintenance and Repair ("M&R")

22. M&R was evaluated independently of the end-to-end test and other analysis. The key objective of our review was to understand areas of process commonality and

measure overall parity of performance between wholesale and retail operations to determine parity. To do this we performed three separate analyses. First we compared wholesale and retail M&R processes and systems to identify areas of commonality. Second, to measure performance for common areas (i.e., the trouble resolution component) of the M&R process, we reviewed historic wholesale and retail performance data. Third, to compare wholesale and retail performance in areas where the processes differed, we conducted time and activity studies.

The End-to-End Test

23. A major component of our analysis was the review of an "end-to-end" test designed to assess BA-NY's ability to process real production orders (i.e., CLEC local service requests that result in an actual change in the customer's local service provider) at anticipated 1998 commercial volumes. The test was used as a basis for critically examining the functionality, performance, and current capacity of the processes and systems integral to wholesale operations.

24. The test was conducted over a three-day period and consisted of two days of approximately 4,000 orders per day and a peak volume day of approximately 7,500 orders. The two days of orders in the 4,000 range were meant to test an 'average' 1998 day, while the peak volume day was designed to account for the potential that service order volumes can spike from time-to-time.

25. The volumes used in the test included a combination of the CLEC orders sent and processed during the test time-frame, and orders supplied through a "test CLEC"

which used available and unused company lines, and actual BA-NY employee accounts as the source of its service orders. The UNE-loop and Centrex order types were limited to the number of existing production orders actually submitted by CLECs because of the difficulty in constructing these types of orders for delivery through the "test CLEC". Exhibit C-1 shows total test volumes.

26. The total volumes processed during the test were designed to stress the processes and systems and exceed 1998 projected volumes. Because of its importance to the end-to-end test, we evaluated the company's test volumes for reasonableness. Specifically, we compared the test volumes to the company's 1998 projected wholesale volumes.

27. The results of our review of the company's projections appear in Exhibit C-2. As the exhibit shows, we found that the test volumes were significantly greater than 1998 projections. Additionally, we determined that the test volumes also generally reflected the distribution of order types projected for 1998.

28. A central feature of the test was the establishment of a test-CLEC that simulated the operations of an actual CLEC placing orders in BA-NY's New York market. The test-CLEC performed typical CLEC functions, including: (1) transmitting the order requests to BA-NY via the electronic gateways; (2) responding to a subset of queries from BA-NY to test that the function worked (where there was an error or omission pertaining to the service request); and (3) receiving firm order confirmations (indicating that the service request was ready for provisioning) and service order completion notices (indicating that provisioning was complete).

29. We monitored the test and analyzed performance data generated by the test. Among other activities, during each of the three test days covering the ordering and provisioning process, we had professional staff at various operations centers to verify that clerks and service representatives were following test procedures and were recording times accurately.

30. Additionally, we monitored the operations of the test-CLEC established for the end-to-end test to ensure that local service requests were transmitted to BA-NY according to the test plan and that test measurements were captured in an accurate manner. Finally, we reviewed all test documentation generated by the test administrators. Exhibit C-3 offers a more detailed description of the end-to-end test.

CONCLUSION

31. This concludes my affidavit.

I swear under penalty of perjury, that the foregoing is true and correct to the best of my knowledge and belief.

Gerard J. Mulcahy

Sworn to before me this
4th day of November, 1997

Notary Public

KEVIN LYONS
Notary Public, State of New York
No. 01LY5014266
Qualified in Rockland County
Commission Expires July 15, 1999

ATTACHMENT 1

DETAILED ANALYSIS

D. Detail of PRE-ORDER ANALYSIS

Objective

The objective of the pre-order analysis was to evaluate the system's ability to provide access to the correct customer records and the databases necessary to produce a service request. Specifically, we assessed the company's capacity to process expected 1998 volumes of pre-order transactions and we evaluated relative wholesale and retail pre-order transaction performance.

Current Situation

Most CLECs currently access pre-order information using a Web site developed for wholesale customers. CLEC service representatives enter customer information into fields on the site, then forward the request to BA-NY. The requested information is compiled from the back-end systems and sent to the CLEC in a standardized readable format. At that time, the CLEC can either read the information on the screen or print it out.

CLECs can also access pre-order information by constructing their own applications that work directly with the company's systems. BA-NY has published standards and parameters (BA-NY's EIF protocol) describing the requirements for these application-to-application interfaces.

Exhibit D-1 and D-2 present schematics of how the company's wholesale and retail pre-order systems interact with legacy back-end systems to support pre-order functionality, by order type. As exhibit D-1 shows, the same systems and databases are used by both the wholesale and retail operations.

Exhibit D3-a presents historical pre-order transaction volumes. As the exhibit shows, a total of approximately 118,000 mechanized pre-order transactions were processed by the company during the January to September 1997 period. Using September data (the highest month), this equates to an average daily pre-order transactions volume of approximately 1,500 per day. The company currently tracks volume levels for five pre-order transaction types including customer service records retrievals, address validations, product and service availability queries, due date availability queries, and telephone number availability and reservation. The majority (over 75%) of wholesale pre-order transactions for September 1997 were requests for customer service records.

BA-NY neither collects nor maintains actual OSS response time statistics for it's own retail representatives or CLEC representatives accessing the pre-ordering systems. However, the company does replicate typical CLEC and retail pre-order transactions on an on-going basis to determine how the systems are performing. We used this data as a measure of historic performance. The company replicates transactions for each transaction type except telephone number availability and reservation which cannot be simulated due to difficulties in ensuring that a telephone number reserved as part of the simulation would return to the limited inventory of numbers. Details of the process and systems used to replicate the pre-order transactions are included in the Canny affidavit.

Approach

To evaluate the functionality of the pre-ordering systems, we interviewed BA-NY personnel, reviewed system documentation, and reviewed historical processing statistics (both wholesale and retail). We also used the stated functionality as the basis of the transaction types used in the pre-order capacity "stress test".

To assess capacity, we constructed a pre-order capacity "stress test." The electronic capacity stress test simulated a high volume of pre-order transactions identical in nature to current, live transactions and at a level that exceeded the company's 1998 projections.

To perform this test, the company developed a computer simulation application that submitted pre-determined volumes of pre-order transactions from outside the company firewall through to the BA-NY pre-ordering systems. Placing orders from this vantage point allowed the test to replicate the way CLECs currently send pre-order transactions. To replicate multiple simultaneous users, ten PCs were employed to generate the pre-order transactions. Each PC simulated the activity of 20 individual wholesale users for a total of 200 simultaneous users during the session.

The pre-order stress test was conducted over a three-hour period during the second, peak volume day of the end-to-end test. Combined pre-order and order volumes during the end-to-end test provided the opportunity to assess pre-order system processing capabilities under conditions similar to the future production environment. This element of the test was also important because the pre-ordering systems rely on many of the same systems as the ordering systems. The test therefore allowed us to evaluate the combined impact of pre-order and order volume on system performance. We also tracked pre-order activity for days one and three of the test to evaluate performance on an average day.

A constant load of 5,765 pre-order transactions per hour were submitted for three consecutive hours during the test. This transaction level was based on the peak day demand of approximately 8,000 orders planned for the second day of the end-to-end test. It was determined by multiplying an initial estimate for the peak test daily order volume of 8,000 (the actual peak was around 7,500) by the estimated 1998 ratio of 3.8

pre-order transactions per order (the current ratio is 2.6 transactions per order). This calculation provided a per day transaction volume of approximately 30,400 or 3,800 per hour, assuming an 8 hour day. We also assumed that these transactions would not be spread evenly throughout the day; rather they would peak at certain hours during the day. We therefore increased the average hourly value of 3,800 by 50% to 5,700 transactions per hour.

The stress test response time performance was compared to historic wholesale response time metrics to assess the system's relative performance in a high volume situation.

Results

The results of our review showed that the company currently provides the functionality to allow CLECs to conduct pre-ordering activity for the resale and UNE services included in the test and can do so at performance levels within 4 to 10 seconds those experienced by retail operations.

The results of the electronic stress test show that the company can process under existing systems capacity, at least 5,765 pre-order transactions per hour or 46,120 per eight hour day. This is more than three times the anticipated 1998 average volume of 15,245 total transactions per day, (see Exhibit D-5).

At these high volumes, the average CSR response time during the stress test was 7.7 seconds; the average response time for the other pre-order transaction types was 17.2 seconds. This compares to retail performance of 0.1 and 0.6 respectively for CSR and other transaction types for the same time period. Details of the stress test results are shown in Exhibit D-4.

Under typical operating conditions, the pre-order performance levels improve significantly. During the two average days of the end-to-end test CSR, response time was 4.7 seconds and other transaction response time was 10.6 seconds. This level of response time was supported by September results showed CSR response time at 3.1 seconds and other transaction response time at 11.1 seconds (see exhibit D-3b).

To put the difference in wholesale and retail response time in perspective, it is worthwhile to consider a practical example. A new line customer service order contact presently takes BA-NY on average 25 minutes to complete and typically requires four pre-order transactions (one CSR and three other transaction types). Assuming it would take a CLEC approximately the same amount of time for the same order type, the incremental difference for the wholesale processing time over retail amounts to 58 seconds or about 4% of total customer contact time, if we use the higher response times measured during the stress test. If we use the times measured on the two average days of the end-to-end test, this difference drops to 35 seconds or only 2.3%.

E. Detail of ORDER ANALYSIS

Objective

The objective of our wholesale order analysis was to determine if the company could process expected 1998 volumes at the levels of performance established as standards by the company. Additionally, we evaluated overall order capacity.

Overview of Current Situation

Since October 1996, BA-NY has processed a total of 41,109 production resale orders and 209 production platform orders. The UNE-loop order center has processed 4,079 production UNE-loop orders since January 1997. BA-NY currently operates four centers responsible for receiving and processing wholesale orders. Two Resale Service Centers process all resale orders: the New York resale center handles all NY State resale orders while the New England resale center processes all other resale orders. (The NE Resale Center can serve as an 'overflow' center for NY Resale, as needed.) There are also two UNE order centers, one based in New York which handles all UNE-loop orders for both NY and NE, and one based in New England which, until recently, handled all UNE-platform orders (includes loop, switch port, and switch feature) orders for both NY and NE.[1]

BA-NY has also commissioned an outsourcing company, the ICT Group (ICT), based in Pennsylvania, to handle the overflow of certain order types, specifically simple resale and UNE-platform orders. This fifth center is "on call" to assist when order volume exceeds the capability of BA-NY resources.

Currently, the NY and NE resale service centers employ 39 and 31 service order representatives respectively. The NY UNE-loop order center employs 17 service order representatives and the NE UNE-platform order center employs 30 service order representatives. ICT has approximately eight service order representatives dedicated to handling BA-NY overflow orders (with three additional representatives available). Exhibit E-3 shows the number of service representatives for each of the five wholesale ordering centers.

The NY and NE Resale Service Centers have been operational since October 1996. Exhibit E-5a reflects the monthly historical order volumes. All resale orders are currently transmitted electronically, mostly through the company's WEB interface. Today, the resale order mix is approximately 50% business and 50% residential orders, or 87% and 13% of lines provisioned, respectively. Conversion orders ('as is' and 'as specified') currently account for over 50% of resale orders. Other order types include new line orders, subsequent orders (i.e. the customer has already converted and wants to add or change a feature or service), disconnects, and complex orders (Centrex, ISDN, etc.). Across the entire BA-NY region, 35 CLECs are sending resale orders.

BA-NY's UNE-loop order center has been operational since June 1995. Although the company provides CLECs with the ability to send orders electronically, approximately 95% of orders have been received by fax. Today, almost 100% of the UNE-loop orders are business orders. UNE-loop conversions accounted for over 50% of total UNE-loop orders from January 1997 through June 1997. Other order types include new line orders, disconnects, interim number portability only (INP) orders, and complex orders (Centrex, ISDN, etc.). To date, BA-NY has received very few for unbundled switching. Ten CLECs are currently sending UNE-loop orders to the company.

The New England UNE center has been operational since June 1997 and has received approximately 209 orders for UNE-Platform since the center began operating. All UNE-platform orders are transmitted electronically over EIF. Today, the order mix consists of 10% business and 90% residential orders. Conversion orders ('as is' and 'as specified') are predominant. Other order types include new line orders, subsequent orders and inter-office facilities orders. Two CLECs are currently sending orders to this center.

ICT has been working with BA-NY since October 1996 and has, as of September 30, 1997, processed over 11,300 orders. At present, all orders for ICT processing are routed electronically from BA-NY to ICT. Thus far, ICT has processed only those live simple resale orders requiring manual intervention. However, as part of the end-to-end test ICT personnel hired and trained, in just a few weeks, a group of people to handle simple platform orders. ICT has established training and infrastructure to increase the number of representatives to handle order volumes as needed.

Resale Order Process

All CLEC orders are sent electronically via a Web interface or a custom-designed CLEC EIF or EDI interface. Exhibit E-1a shows a process flow of the wholesale resale order process. As the exhibit shows, orders are received by BA-NY through the wholesale ordering interface that gives the CLECs access to BA-NY's OSS. The following paragraphs describe how an order is processed after the company receives it.

First, the order is checked electronically in the wholesale ordering interface for certain types of basic errors (e.g., the required number of pages for a service order). If an error is detected, the order is automatically sent back to the CLEC along with a description of the error.

Second, the order can pass through the wholesale ordering interface into the order processor where it is also checked for other types of errors (e.g. content errors, wrong billing telephone number, etc.). If errors are found in the order at this point, the order is sent back electronically, along with a description of the error to the CLEC for correction. In September, an average of 25% of the orders were sent back to the CLEC.

Third, an order can reach the order processor system and "drop out" for manual processing by the Resale Service Center or ICT. Orders that follow this path include simple resale order types that have not yet been designed to flow-through the order

processor (i.e. call answering, phonesmart, hunting), orders in which the CLEC uses the 'remarks' field (which may or may not indicate important verbatim information for the order which cannot be interpreted by the order processor), and orders which have over 20 lines.

Once these orders "drop out" of the system they are sent to the wholesale ordering interface and retrieved by the work force manager in the Resale Service Center. The work force manager either distributes these orders to BA-NY Resale managers(who distribute them to service order representatives), or sends them to the ICT Center.

The Resale Service Center order representative (or ICT representative) will then pick up the order off his/her computer, review the order for any mistakes, and double-check the pre-order information. In the event that there are any CLEC mistakes, the service order representative will send an electronic 'query', or a short e-mail message, to the CLEC to ask for more information. The CLEC typically responds with an e-mail message. When the CLEC response is received the BA-NY or ICT service order representative makes the change to the order and directly enters the order into the order processor.

An additional path an order can take once it reaches the wholesale ordering interface is to flow-through to the order processor without manual intervention and continue automatically to the provisioning systems. BA-NY refers to this path as 'Level 5', which means that the order is 100% automated and requires no manual intervention by BA-NY personnel. Further historical detail of flow-through performance is shown in Exhibit E-5b.

UNE-platform Order Process

The BA-NY UNE-platform order process is similar to the *manual* resale order process. UNE-platform orders must be entered directly into the back-end order processing systems. All orders are transmitted from the CLEC to BA-NY through the wholesale ordering interface, received by the UNE-platform Center manager, and distributed to the service representatives to input into the order processor. There is no "flow-through" capability (i.e. completely automated order processing) for UNE-platform orders.

UNE-loop Order Process

The BA-NY UNE-loop order process is distinct from the resale and UNE-platform order process in three key areas. First, as of the end of September approximately 95% of UNE-loop orders were received via fax, although the wholesale ordering interface provides the functionality to support electronic transmission of UNE-loop orders. Secondly, the UNE-loop center handles more complex, multi-line service orders which require a longer processing time. Finally, the most common order type currently is a "hot-cut" or conversion, which involves a more complicated order entry process in the order processing system than most other resale-POTS and UNE-platform order types. Currently new line UNE-loop orders (under nine lines) have "flow-through" capability. Exhibits E-1b shows the UNE-loop process flow.

In the UNE-loop center, once a faxed order is received, it is reviewed by one of the center area managers, entered into an order log, and distributed to a service order representative. The service order representative checks the order for errors. If there are errors, the service order representative calls to alert the CLEC and waits for a response. If there are no errors, (or once a response is received), the service order representative double checks pre-order activities, and then begins typing the order into the service order processor. Once the service order representative completes entry into the order processor, he/she documents relevant order information to be sent to the BA-NY Installation and Maintenance group, and completes an order confirmation sheet to fax to the CLEC.

Potential delays may result along the ordering process for CLECs who do not use the electronic interface. These CLECs can only perform CSR pre-order activities and not other pre-order activities. As a result, orders generated by these CLECs may not have undergone an adequate level of pre-order verification which may cause delays in the order process.

Complex Order Process

All orders requiring design, as well as resale orders over 20 lines and UNE-loop orders over nine lines, require manual order processing. Order activities are more time-consuming with complex orders. For example, UNE orders with over nine lines require the BA-NY service order representative to call BA-NY engineering the BA-NY technical center to request pre-survey work, and the BA-NY underground center to reserve lines. Centrex orders require the BA-NY service order representative to call the engineering center to request pre-design work and the Line Assignment Center to reserve a cluster of lines. The same group using the same systems and processes for both retail and wholesale orders handles complex orders.

CLEC Notification during the Order Process

CLECs receive notifications from BA-NY at various points in the order process, including confirmation or rejection of the order and completion of the order. The performance measures used in the ordering process measure the timeliness of notification to the CLEC at each stage of the process. Exhibit E-4 shows the stages of the ordering process when the CLEC receives notification from the company.

If the electronic order is prepared or written incorrectly, the CLEC will receive an error message indicating that the CLEC's order cannot be accepted by the wholesale ordering interface or the order processor. The error description is attached to the order and sent back to the CLEC for correction. The CLEC also receives a 'query' from a BA-NY service order representative if the order requires manual attention, the details of which are contained in the *order rejection notification*. Historically the company has only tracked rejects for potential flow-through orders, i.e., Level 5 orders. Exhibits E-5c and E-5e provide more historical results for order reject rates and timeliness of order rejection notification, respectively.

Once the order is input into and accepted by the service order processor, the system automatically sends an *order confirmation* to the CLEC indicating that the order is successfully on its way to provisioning. Similar to order rejection notification timeliness the company measures the timeliness of sending order confirmations to CLECs for flow-through orders. The chart in Exhibit E-5d indicates that the average order confirmation notification time for resale orders in August ranges from 57 seconds to 88 seconds on flow-through orders. The performance range for September was greater as a result of the various systems tests performed during the period.

Once the order has been provisioned, the order processor automatically sends a *service order completion notification* to the CLEC. Notification may be by fax, telephone or e-mail, depending on the type of service request and the format in which the CLEC order request was received. Historic results for order completion notifications are not typically captured by the company as the systems providing the start and end times are not linked.

Approach

Our overall approach was designed to evaluate the functionality, capacity and performance of the ordering process. We used the end-to-end test as the primary mechanism for our assessment and we complemented our review with time and activity studies of manual processing, as well as systems utilization reviews, and analysis of historical performance data.

We used the results of the end-to-end test to determine whether the company could process expected future 1998 volumes. In particular, the test volume on the second day was intended to test for a 1998 "peak day" volume. By using a 'peak day' as part of the test, we were able to evaluate whether the company could handle spikes in order volumes. The end-to-end test, including test volumes, is detailed in Exhibits C-1 to 3.

We complemented our systems capacity evaluation with an assessment of manual capacity. Within each order center, we collected processing times for various order types before and during the end-to-end test. This analysis allowed us to determine the total work time associated with various order types. We also identified current staffing levels for each order center. Combining the processing time analysis with staffing levels allowed us to estimate manual capacity for each order center.

We also estimated the company's overall ordering process capacity. Overall capacity is a function of the company's combined electronic and manual capacity. To estimate electronic ordering capacity, we monitored systems utilization and order processing throughput during the end-to-end test. These measures allowed us to determine the maximum order processing performance demonstrated by the systems during the test. Furthermore, we could determine whether the ordering systems had any excess capacity during the high volume day of the end-to-end test.

To evaluate the functionality of the ordering process systems, we reviewed historic performance relative to live production. We also included the dominant order types within the end-to-end test that the company expected at that time, to receive in 1998. Our review of the end-to-end test results allowed us to evaluate the functionality of the ordering process for each of these order types.

To evaluate ordering performance, we reviewed historical data and the results of the end-to-end test. These results for the ordering process were evaluated relative to the standards established by the company. The specific ordering metrics employed during the end-to-end test included:

- Order Volume By Type
- Percent Flow-Through
- Order Reject Rate
- Order Reject Timeliness
- Order Confirmation Notification Timeliness
- Order Completion Notification Timeliness

Results

The results of the end-to-end test indicate that BA-NY is capable of processing expected 1998 total order volume through its ordering processes, while operating at performance levels that meet or exceed the company's standards. During the high volume day of the end-to-end test, the company successfully processed 7,453 orders through the ordering process. This is approximately six times the company's projection for a 1998 average day. (See Exhibit C-2). Over the three days of the test, the company successfully processed a total of 15,330 service requests to order confirmation. See Exhibit E-6 for a further breakdown of orders processed by day. During the same time frame, 1,140 orders were rejected by the company and sent back to CLECs due to errors detected by the ordering OSSs. The following table shows the processing of test orders during the three-day end-to-end test.

	[illegible]	[illegible]	[illegible]
Total Orders Processed	12,865	2,465	15,330
Flow-through	11,131	0	11,131
Manual Processed	1,734	2,468	4,202
Confirmed	11,748	2,445	14,193
Rejected	1,117	23	1,140

The test also demonstrated that the company could identify and process CLEC errors. This includes errors detected as the order initially entered the ordering interface as well as errors detected by the back-end ordering OSSs. Specifically, the test CLEC intentionally submitted 20 errors during the end-to-end test. All of these errors were detected by the company and returned to the test CLEC with electronic notifications of